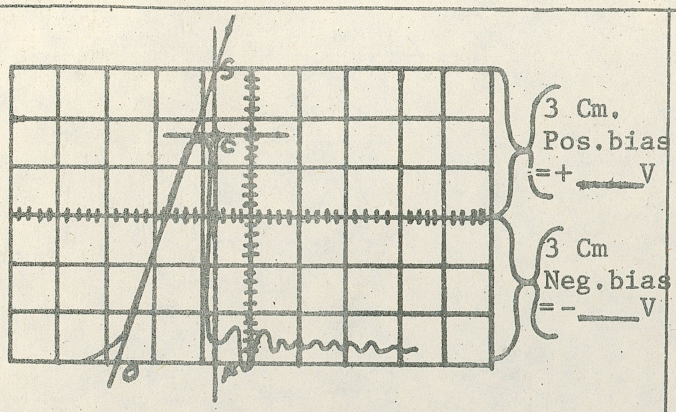
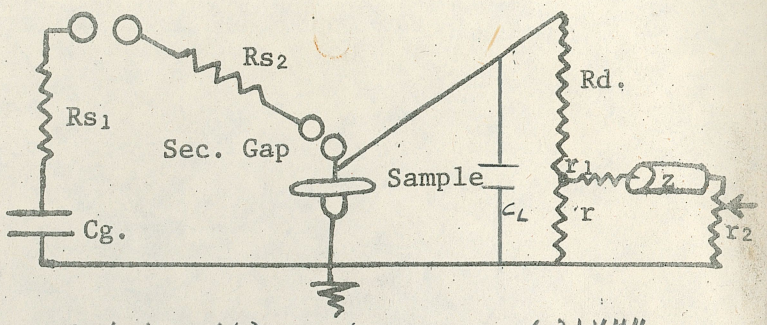
MEASUREMENT OF STEEP WAVE FRONT

Test Date

505390 (Catalog Number) | Month Day Year | AE, EN, or TR | CR (Operator)





C_L = 3 stacks of (2) 7785's + 1 stack of 31444

3 CM Pos. Bias on Screen = + 153.66 V

3 CM Neg. Bias on Screen = - 149.32 V

6 CM Bias on Screen = 302.98 V

Rd = 4699 Ω Z = 75 Ω

r = 20.1 Ω; r_1 = 56.2 Ω; r_z = 72 Ω

Ratio = $\left(\frac{Rd\ (r + r_1 + r_2)}{r \times r_2} + 1\right)$ 482

kV (6 CM) = $\frac{\text{6 CM Bias Volts X Divider Ratio}}{\text{Input Attenuator (\% of Signal)}}$

$\frac{302.98 \times 482}{.2}$ = 730 kV

Crest Voltage = $\frac{CF}{SF}$ X kV (6 Cm)

Generator Size 18 Banks

Desired Polarity & kV/us Rs_1 = 0 Rs_2 = 3250 Ω

Polarity = Negative kV/us = ____ Secondary Gap + 0 inches

Low Side Voltage 220 volts Crest Voltage 723 kV

CF = 193 div.

50% CF = 96.5 div.

90% CF = 173.7 div.

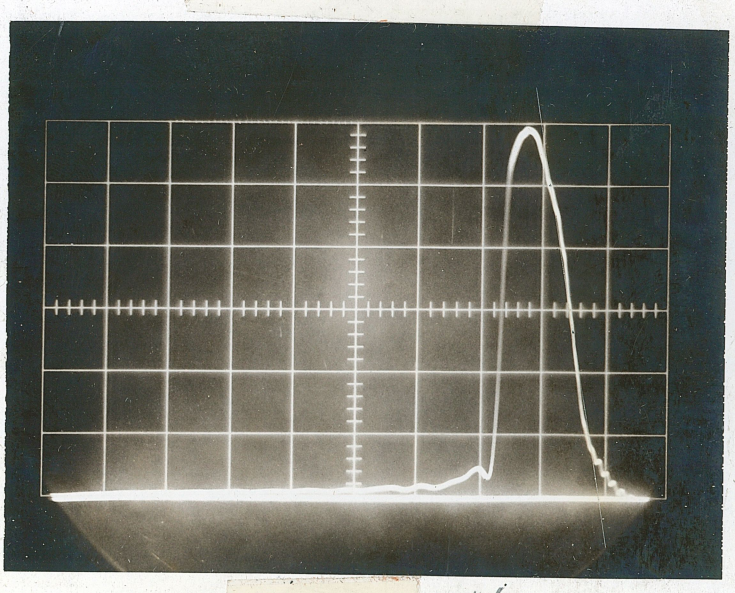
$\frac{\text{OF div.}}{\text{1CM div.}}$ X us/CM (Corr.) = us Front

$\frac{31}{33} \times .2$ = .1879 us

$\frac{\text{kV (6 CM)}}{\text{us Front}}$ = kV/us

$\frac{730}{.1879}$ = 3885 kV/us

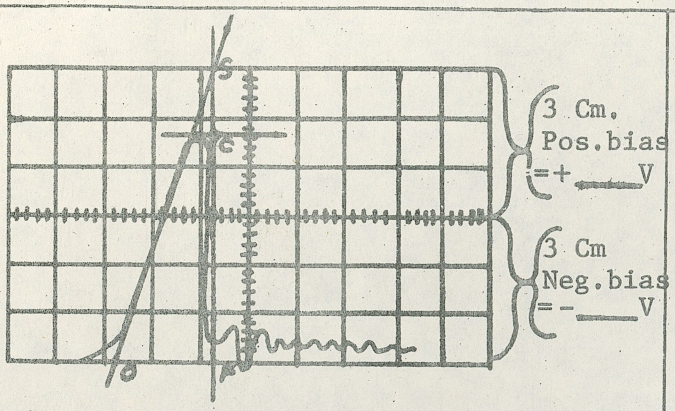
Photograph

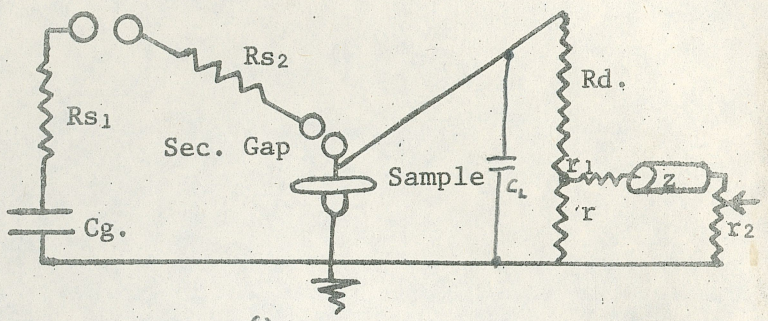


MEASUREMENT OF STEEP WAVE FRONT

Test Date

505390 (Catalog Number) | Month Day Year | AE, EN, or TR | C.A. (Operator)





C_L = 3 stacks of (2) 7785's + 1 stack of (2) 31444

3 CM Pos. Bias on Screen = + 153.66 V

3 CM Neg. Bias on Screen = - 149.32 V

6 CM Bias on Screen = 302.98 V

Rd = 4699 Ω z = 75 Ω

r = 201 Ω; r_1 = 56.2 Ω; r_z = 72 Ω

Ratio = $\left(\frac{Rd\ (r + r_1 + r_2)}{r \times r_2} + 1\right)$ = 482

kV (6 CM) = $\frac{\text{6 CM Bias Volts X Divider Ratio}}{\text{Input Attenuator (\% of Signal)}}$

$\frac{302.98 \times 482}{.2}$ = 730 kV

Crest Voltage = $\frac{CF}{SF}$ X kV (6 Cm)

Generator Size 18 Banks

Desired Polarity & kV/us Rs_1 = 0 Rs_2 = 3250 Ω

Polarity = Positive kV/us = ____ Secondary Gap + 0 inches

Low Side Voltage 220 volts Crest Voltage 659 kV

CF = 176 div.

50% CF = 88 div.

90% CF = 158.4 div.

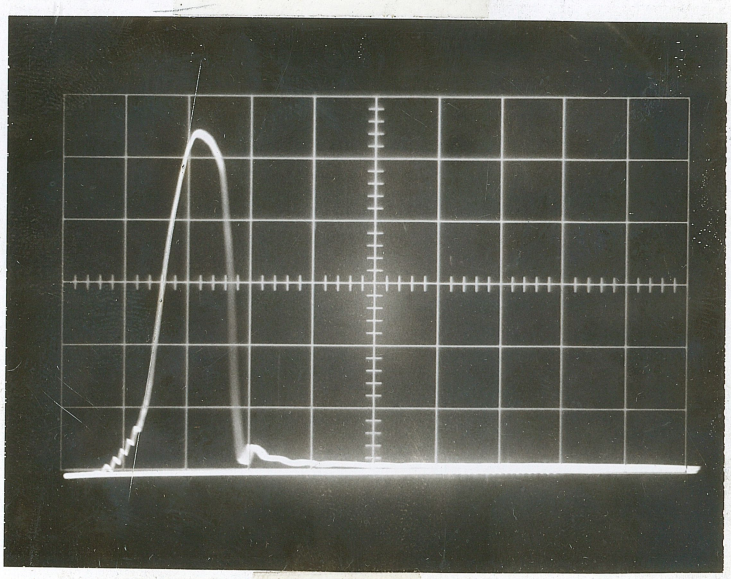
$\frac{\text{OF div.}}{\text{1CM div.}}$ X us/CM (Corr.) = us Front

$\frac{31}{33} \times .2$ = 1879 us

$\frac{\text{kV (6 CM)}}{\text{us Front}}$ = kV/us

$\frac{730}{1879}$ = 3885 kV/us

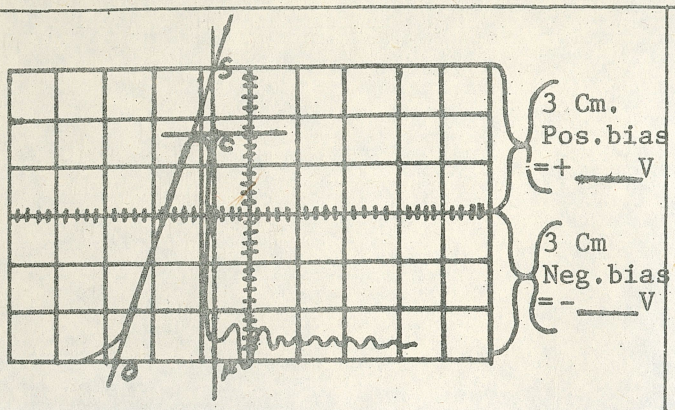
Photograph



MEASUREMENT OF STEEP WAVE FRONT

Test Date

Catalog Number | Month Day Year | AE, EN, or TR | Operator



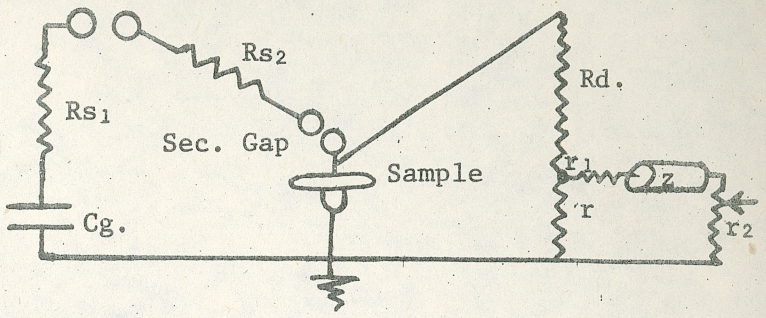
3 CM Pos. Bias on Screen = + _____ V

3 CM Neg. Bias on Screen = - _____ V

6 CM Bias on Screen = _____ V

$$kV\ (6\ CM) = \frac{6\ CM\ Bias\ Volts\ X\ Divider\ Ratio}{Input\ Attenuator\ (\%\ of\ Signal)}$$

_____ X _____ = _____ kV



Rd = _____ Ω z = _____ Ω

r = _____ Ω ; r_1 = _____ Ω; r_z = _____ Ω

$$Ratio = \left(\frac{Rd\ (r + r_1 + r_2)}{r \times r_2} + 1\right)$$

$$Crest\ Voltage = \frac{CF}{SF} \times kV\ (6\ Cm)$$

Generator Size _____ Banks

Desired Polarity & kV/us Rs_1 = _____ Rs_2 = _____

Polarity = _____ kV/us = _____ Secondary Gap + _____ inches

Low Side Voltage _____ volts Crest Voltage _____ kV

CF = _____ div.

50% CF = _____ div.

90% CF = _____ div.

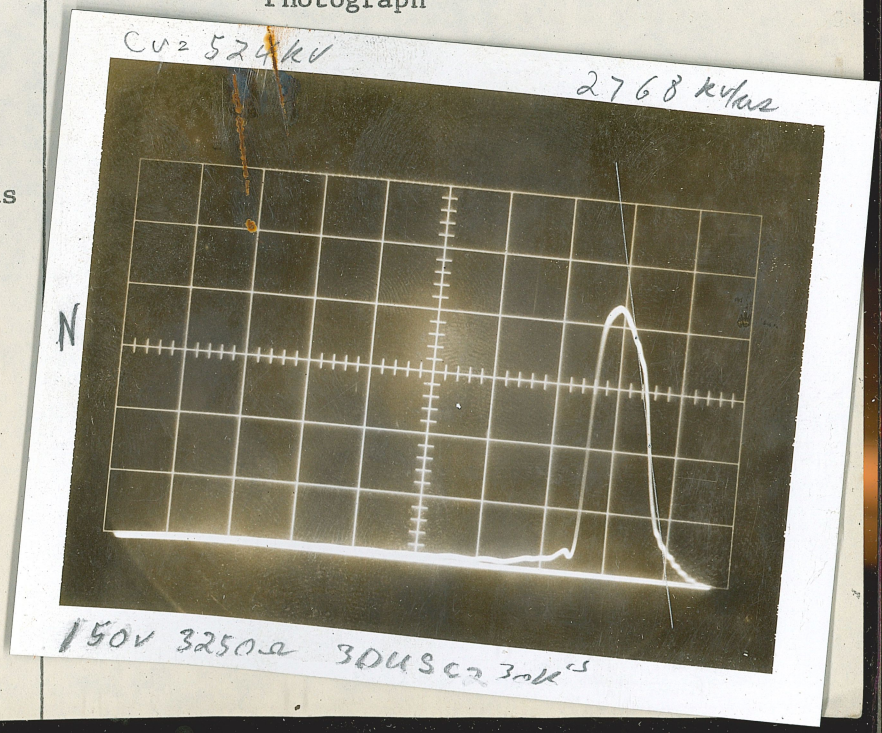
$$\frac{OF\ div.}{1CM\ div.}\ X\ us/CM\ (Corr.) = us\ Front$$

_____ X _____ = _____ us

$$\frac{kV\ (6\ CM)}{us\ Front} = kV/us$$

_____ = _____ kV/us

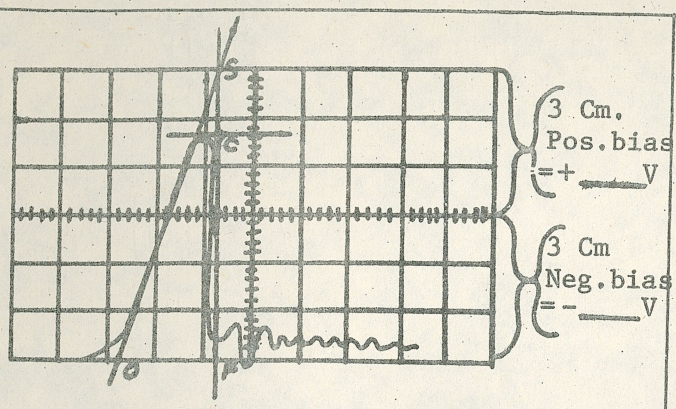
Photograph



MEASUREMENT OF STEEP WAVE FRONT

Test Date

Catalog Number | Month Day Year | AE, EN, or TR | Operator



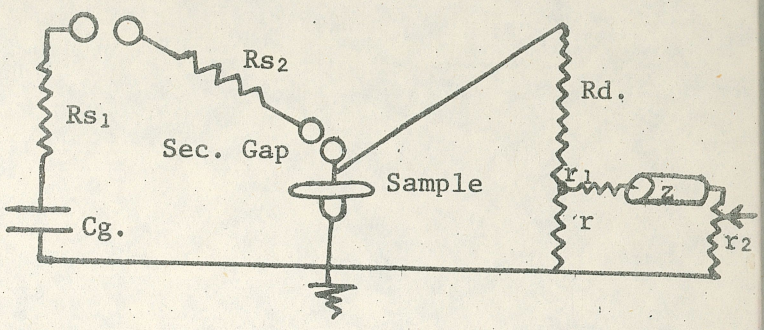
3 CM Pos. Bias on Screen = + _____ V

3 CM Neg. Bias on Screen = - _____ V

6 CM Bias on Screen = _____ V

$$kV\ (6\ CM) = \frac{6\ CM\ Bias\ Volts\ X\ Divider\ Ratio}{Input\ Attenuator\ (\%\ of\ Signal)}$$

_____ X _____ = _____ kV



Rd = _____ Ω z = _____ Ω

r = _____ Ω; r_1 = _____ Ω; r_z = _____ Ω

$$Ratio = \left(\frac{Rd\ (r + r_1 + r_2)}{r \times r_2} + 1\right)$$

$$Crest\ Voltage = \frac{CF}{SF} \times kV\ (6\ Cm)$$

Generator Size _____ Banks

Desired Polarity & kV/us Rs_1 = _____ Rs_2 = _____

Polarity = _____ kV/us = _____

Secondary Gap + _____ inches

Low Side Voltage _____ volts

Crest Voltage _____ kV

CF = _____ div.

50% CF = _____ div.

90% CF = _____ div.

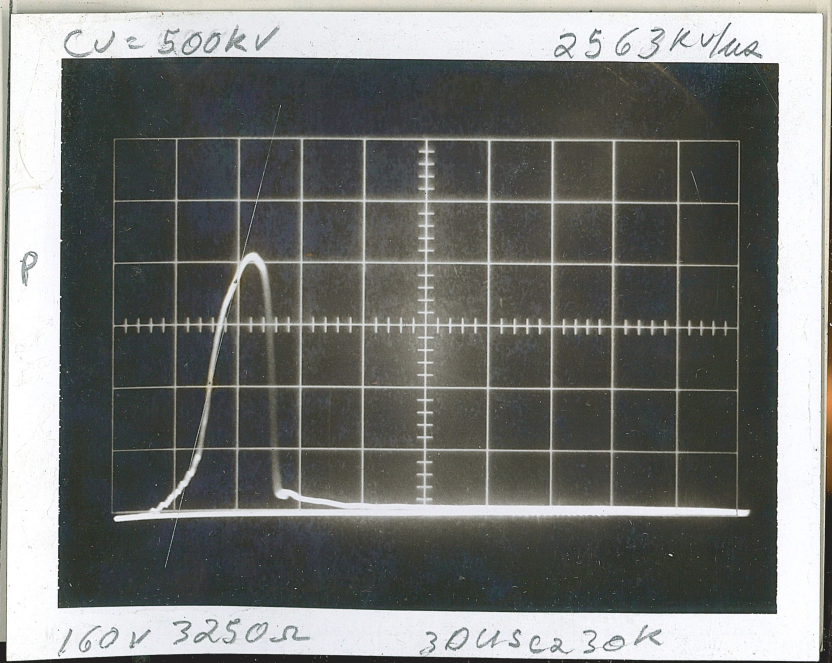
$$\frac{CF\ div.}{1CM\ div.}$$ X us/CM (Corr.) = us Front

_____ X _____ = _____ us

$$\frac{kV\ (6\ CM)}{us\ Front} = kV/us$$

_____ = _____ kV/us

Photograph



LOCKE 長谷川様

㈱設三 御中

昭和55年1月24日

㈱技術部00079号

高 圧

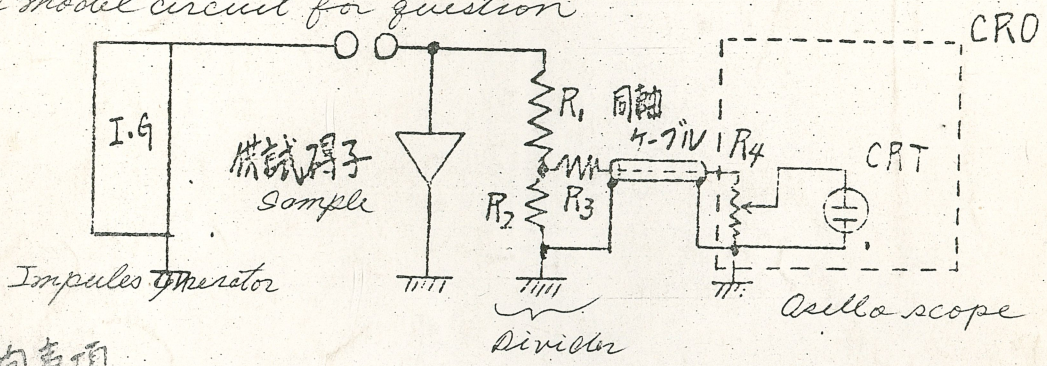
急峻波試験に関する質問事項

Question matter about step front wave test

別添メモ(4技術80004号)に示した考え方に基き、表記の件を以下にとりまとめましたので、よろしく御検討願います。

1. 質問のための モデル回路図

The model circuit for question



2. 質問事項

Question matters

(1) 分圧器の応答特性不明とのことであるが、計算でも概略推定可能。ついては次の点についてどうなっているでしょうか。

① IG本体、供試碍子、測定系を含む配置・寸法(天井、壁面、床面等に対しても)。
How about geometical arrangement, dimension of Impules generator, Sample and measuring equipment

② 分圧器R_1(高圧側)各部の構造と寸法および巻線等の仕様。
How about the structure, dimenson and specification of coil for divider R_1

③ 回路構成のための各接続線の長さ、太さ。
How long dose it length, diameter of conection Cable and wire for circuit constitution

(2) 分圧器のスマリングということも考えられます。次の点はどうなっているでしょうか。
Where is insert, resistance R_3 and How much value resistance

① 分圧器の低圧側抵抗R_3はどこに入っているか。またその値は何Ωか。
How much resistance value of divider R_3 and are there included on CFO

② CRT側抵抗R_4は何Ωか。そしてそれはCROに内蔵のものか。

TEXTONIX INC
TYPE 507
MOD 702W
SURGE OSCILLO SCOPE

③ CROのメーカ、形式、仕様(入力インピーダンス 72Ω, 入力感度レベル 50~5000V/cm, 掃引速度等 500~0.05 usec/cm)は何か。
CRO前面パネルの写真があると助かります。
How much value specifict impedance of coaxial cable between R_3 and R_4

AMPHENOL RG174/U

④ R_3とR_4をつなぐ同軸ケーブルの特性インピーダンスはどれ位か。
How much value resistance of ground How about distribution of grouned wire

(3) その他接地抵抗、接地線の引回しはどうなっていますか。

以上